



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

Washington State Energy Code Development Standard Energy Code Proposal Form

Log No. 167
TAG Revision 6/25/21

Code being amended: ☒ Commercial Provisions ☐ Residential Provisions

Code Section # C403.4.12 (new section)

Brief Description: Require modulating PICVs where flow rate over coils is over 10 GPM.

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

C403.4.12 Pressure Independent Control Valves. Where design flow rate of heating water and chilled water coils is ~~10-5~~ GPM or higher, modulating pressure independent control valves shall be provided.

Purpose of code change:

Pressure-independent combi valves (PICVs) play an important role in reducing energy consumption while maintaining building temperature at optimal setpoints. PICVs are effective because they use dynamic-balancing to handle pressure fluctuations in a building's hydronic system. Dynamic-balancing has two major functions. First, it prevents the oversupply of consumers and the subsequent hydronic interference. Second, it drastically reduces temperature swings. As a result, the system uses less energy to maintain occupant comfort.

In addition, PICVs have a pre-setting function that provides even finer temperature control accuracy, further eliminating temperature fluctuations and discomfort. As a result, occupants are less likely to raise or lower temperature settings, adding to the overall energy savings that the valves generate. PICVs also allow for advanced pump control strategies that reduce energy use even more.

Your amendment must meet one of the following criteria. Select at least one:

- | | |
|--|---|
| <input type="checkbox"/> Addresses a critical life/safety need. | <input type="checkbox"/> Consistency with state or federal regulations. |
| <input type="checkbox"/> The amendment clarifies the intent or application of the code. | <input type="checkbox"/> Addresses a unique character of the state. |
| <input checked="" type="checkbox"/> Addresses a specific state policy or statute.
(Note that energy conservation is a state policy) | <input type="checkbox"/> Corrects errors and omissions. |

Check the building types that would be impacted by your code change:

☐ Single family/duplex/townhome

☐ Multi-family 4 + stories

☒ Institutional

☐ Multi-family 1 – 3 stories

☒ Commercial / Retail

☐ Industrial

Your name Duane Jonlin

Email address duane.jonlin@seattle.gov

Your organization City of Seattle

Phone number 206-233-2781

Other contact name -

Economic Impact Data Sheet

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants and businesses.

PICVs add modestly to cost of hydronic circulation system, but are capable of reducing HVAC energy use more than 20%.

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

\$0.01/square foot

Show calculations here, and list sources for costs/savings, or attach backup data pages

\$1000 extra for PICVs in 100,000 sf building

Provide your best estimate of the annual energy savings (or additional energy use) for your code change proposal?

0.05 KWH/ square foot

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application: